

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number
WO 2004/023014 A3

(51) International Patent Classification⁷: **E21B 19/16**

(21) International Application Number:
PCT/US2003/025716

(22) International Filing Date: 18 August 2003 (18.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/412,371 9 September 2002 (09.09.2002) US

(71) Applicant (for all designated States except US): ENVEN-
TURE GLOBAL TECHNOLOGY [US/US]; 16200 A Park
Row, Houston, TX 77084 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): COSTA, Scott
[US/US]; 2011 Willow Point, Kingwood, TX 77330 (US).
RING, Lev [US/US]; 14126 Heatherhill Place, Houston,
TX 77077 (US). MENCHACA, Jose [US/US]; 9800
Pagewood Lane, Number 210, Houston, TX 77042 (US).

(74) Agent: MATTINGLY, Todd; Haynes and Boone, LLP,
1000 Louisiana, Suite 4300, Houston, TX 77002-5012
(US).

(81) Designated States (national): AE, AG, AI, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

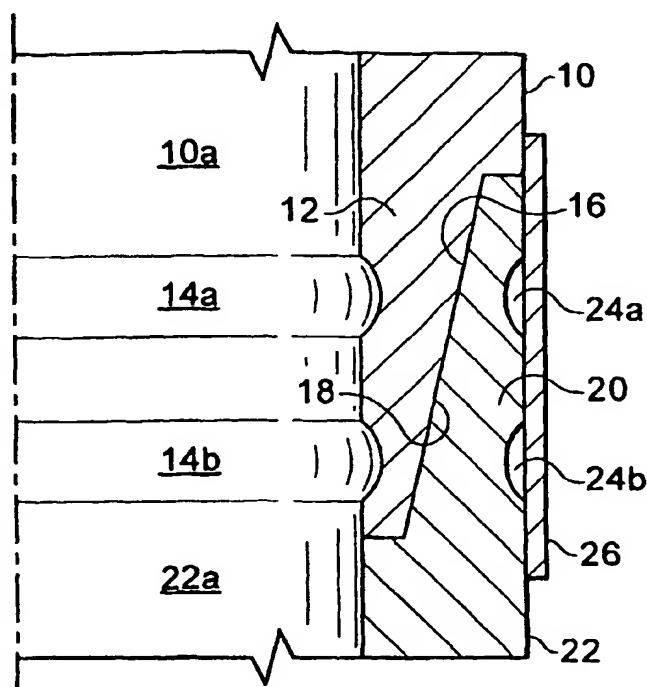
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

[Continued on next page]

(54) Title: THREADED CONNECTION FOR EXPANDABLE TUBULARS



(57) Abstract: A threaded connection for expand-
able tubulars. There is a first tubular (10) with ex-
ternal threads (16) and a second tubular (22) with
matching internal threads. Each of these tubular has
stress concentration grooves (14a, 14b, 24a, 24b).
There is a sleeve (26) that goes over the connection
between the threaded portions of the tubulars. After
connection these tubulars can be expanded down-
hole in a wellbore.

WO 2004/023014 A3



(88) Date of publication of the international search report:
3 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 41/2004 of 7 October 2004, Section II

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25716

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : E21B 19/16 US CL : 166/380, 207; 285/333 According to International Patent Classification (IPC) or to both national classification and IPC																																
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 166/380, 207, 381, 382, 206; 285/333, 334; 403/297 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet																																
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 5,924,745 A (Campbell) 20 July 1999 (20.07.1999), figures 3 and 4, column 3, lines 9 - column 4, line 27.</td> <td>1, 3-5, 7-9, 11, 12, 15, 17-21</td> </tr> <tr> <td>Y</td> <td>SU 1,756,531 A (KRYZHANOVSKII et al) 28 March 1990 (28.03.1990), Figure 1, abstract.</td> <td>1, 3-5, 7-9, 11, 12, 15, 17-21</td> </tr> <tr> <td>Y</td> <td>WO 99/23354 (METCALFE) 14 May 1999 (14.05.1999), figure 5, page 11 lines 23-28.</td> <td>1, 3-5, 7-9, 11, 12, 15, 17-21</td> </tr> <tr> <td>A, E</td> <td>US 6,622,797 B2 (SIVLEY IV) 23 September 2003 (23.09.2003), whole document.</td> <td>1-12, 15-21</td> </tr> <tr> <td>A, E</td> <td>US 6,607,220 B2 (SIVLEY, IV) 19 August 2003 (19.08.2003), whole document.</td> <td>1-12, 15-21</td> </tr> <tr> <td>A, P</td> <td>US 6,564,875 B1 (BULLOCK) 20 May 2003 (20.05.2003), whole document.</td> <td>1-12, 15-21</td> </tr> <tr> <td>A</td> <td>US 2002/0108756 A1 (HARRALL et al) 15 August 2002 (15.06.2002), whole document.</td> <td>1-12, 15-21</td> </tr> <tr> <td>A</td> <td>US 6,322,109 B1 (CAMPBELL et al) 27 November 2001 (27.11.2001), whole document.</td> <td>1-12, 15-21</td> </tr> <tr> <td>A</td> <td>US 6,085,838 A (VERCAEMER et al) 11 July 2000 (11.07.2000), whole document.</td> <td>1-12, 15-21</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5,924,745 A (Campbell) 20 July 1999 (20.07.1999), figures 3 and 4, column 3, lines 9 - column 4, line 27.	1, 3-5, 7-9, 11, 12, 15, 17-21	Y	SU 1,756,531 A (KRYZHANOVSKII et al) 28 March 1990 (28.03.1990), Figure 1, abstract.	1, 3-5, 7-9, 11, 12, 15, 17-21	Y	WO 99/23354 (METCALFE) 14 May 1999 (14.05.1999), figure 5, page 11 lines 23-28.	1, 3-5, 7-9, 11, 12, 15, 17-21	A, E	US 6,622,797 B2 (SIVLEY IV) 23 September 2003 (23.09.2003), whole document.	1-12, 15-21	A, E	US 6,607,220 B2 (SIVLEY, IV) 19 August 2003 (19.08.2003), whole document.	1-12, 15-21	A, P	US 6,564,875 B1 (BULLOCK) 20 May 2003 (20.05.2003), whole document.	1-12, 15-21	A	US 2002/0108756 A1 (HARRALL et al) 15 August 2002 (15.06.2002), whole document.	1-12, 15-21	A	US 6,322,109 B1 (CAMPBELL et al) 27 November 2001 (27.11.2001), whole document.	1-12, 15-21	A	US 6,085,838 A (VERCAEMER et al) 11 July 2000 (11.07.2000), whole document.	1-12, 15-21
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																														
X	US 5,924,745 A (Campbell) 20 July 1999 (20.07.1999), figures 3 and 4, column 3, lines 9 - column 4, line 27.	1, 3-5, 7-9, 11, 12, 15, 17-21																														
Y	SU 1,756,531 A (KRYZHANOVSKII et al) 28 March 1990 (28.03.1990), Figure 1, abstract.	1, 3-5, 7-9, 11, 12, 15, 17-21																														
Y	WO 99/23354 (METCALFE) 14 May 1999 (14.05.1999), figure 5, page 11 lines 23-28.	1, 3-5, 7-9, 11, 12, 15, 17-21																														
A, E	US 6,622,797 B2 (SIVLEY IV) 23 September 2003 (23.09.2003), whole document.	1-12, 15-21																														
A, E	US 6,607,220 B2 (SIVLEY, IV) 19 August 2003 (19.08.2003), whole document.	1-12, 15-21																														
A, P	US 6,564,875 B1 (BULLOCK) 20 May 2003 (20.05.2003), whole document.	1-12, 15-21																														
A	US 2002/0108756 A1 (HARRALL et al) 15 August 2002 (15.06.2002), whole document.	1-12, 15-21																														
A	US 6,322,109 B1 (CAMPBELL et al) 27 November 2001 (27.11.2001), whole document.	1-12, 15-21																														
A	US 6,085,838 A (VERCAEMER et al) 11 July 2000 (11.07.2000), whole document.	1-12, 15-21																														
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																																
<table border="1"> <thead> <tr> <th>Special categories of cited documents:</th> <th></th> </tr> </thead> <tbody> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </tbody> </table>			Special categories of cited documents:		"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed																			
Special categories of cited documents:																																
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention																															
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone																															
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art																															
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family																															
"P" document published prior to the international filing date but later than the priority date claimed																																
Date of the actual completion of the international search 12 March 2004 (12.03.2004)		Date of mailing of the international search report 13 JAN 2005																														
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer David J. Bagnell <i>[Signature]</i> Telephone No. (703) 308-1113																														

INTERNATIONAL SEARCH REPORT

PCT/US03/25716

Continuation of B. FIELDS SEARCHED Item 3:
Derwent, JPO, EPO

Terms: Thread, Stress concentrator, stress, expand/expanding, tubular, casing